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IN THREE SECTIONS

Section I

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The Value to Industry of Association Work in Cost Accounting

Uniform Cost Accounting in the Retail Lumber Business

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The Value to Industry of Association Work in Cost Accounting

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Uniform Cost Accounting in the Retail Lumber Business

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The National Association of Cost Accountants does not stand sponsor for views expressed by the writers of articles issued as Publications. The object of the Official Publications of the Association is to place before the members ideas which it is hoped may prove interesting and suggestive. The articles will cover a wide range of subjects and present many different viewpoints. It is not intended that they shall reflect the particular ideas of any individual or group. Constructive comments on any of the Publications will be welcome.

Additional copies of this Publication may be obtained from the office of the secretary. The price to members is twenty-five cents per copy and to non-members seventy-five cents per copy.

EDITORIAL DEPARTMENT NOTE

The wastes of excessive competition are frequently the result of inadequate or improper cost information. Realizing this fact some groups of companies have, in the past, rushed into a plan of uniform accounting without a proper perspective. Too much benefit has been expected and too little thought given to proper methods of working out uniform accounting plans in these cases. As a result the idea has suffered because of ill-advised application of it in specific instances.

Our papers this time deal with the problem from two points of view. The first paper points out the general benefits to be derived from uniform accounting and gives some excellent suggestions concerning the proper approach to be adopted in working out a plan. The second paper describes the adaptation of the idea to a specific field and shows concretely the use that can be made of the information developed through the use of the system.

Mr. Thomas W. Howard, the author of the first paper, has been a member of the Association since 1920. Following his graduation from college he went with the American Telephone and Telegraph Co. From 1912 to 1916 he was with the National Implement and Vehicle Association of Chicago and following a connection with the Northern Electric Co., Ltd., of Montreal, joined the staff of Arthur Young and Co. in the organization and systems department. In 1923 he became connected with the Chamber of Commerce of the United States and did special cost work there for several years. He is now connected with the National Electrical Manufacturers Association as director of uniform accounting. He is the author of one of the Scovell Prize essays on Presentation of Costs for Executives.

Mr. Don D. Battelle is a member of the firm of Battelle and Battelle, Certified Public Accountants, of Dayton, Ohio. Following his graduation from Ohio Wesleyan University in 1919 he entered the office of his father and brother and passed the Ohio C.P.A. examination in 1923. He has been especially interested in the devising and installing of systems for trades and industries. He is a member of the American Institute of Accountants and the American Society of Certified Public Accountants.

Mr. Howard's paper was delivered before the Hartford Chapter while Mr. Battelle's paper was one of those prepared in the Dayton Prize Contest conducted by the Dayton Chapter last year.

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NATIONAL ASSOCIATION OF
COST ACCOUNTANTS
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THE VALUE TO INDUSTRY OF ASSOCIATION WORK IN COST ACCOUNTING

AS your Chairman has stated, I come to you to-night as a fellow-member of the National Association of Cost Accountants, to discuss the uniform accounting movement in manufacturing industries in its broad aspects, and also to present an outline of the work which for more than 15 years has been going on in the electrical manufacturing industry.

In talking to you on this subject, I am anticipating the thoughts in the minds of some of you that the National Association of Cost Accountants is the standardization agency par excellence for industrial accounting in this country. I am prepared to say for your further reflection that many of the movements for the development of uniform accounting in individual manufacturing industries, of which you have heard or have participated in, have fallen far short of expectations in accomplishment, and seem to offer little opportunity for an ultimate successful result.

It is true that the movement for the standardization of accounting, or the development of uniform accounting, as I prefer to call it, has not gone forward with that speed of development or degree of success that has attended invention and the development of new manufacturing processes. Let me draw some illustrations from the electrical industry.

Fifty years ago, when the uses of electricity was the subject of popular speculation, Carter Harrison, then Mayor of Chicago, commented on the proposal for the use of electric street lighting in the following words:

> "As the father of over six hundred thousand people, all looking to me for protection, I say we want electricity, but we do not want death dashing like a horrid monster through our sreets."

Today it is estimated that over 85 million of our people are enjoying the use of electric lighting in their homes.

At the time the Mayor of Chicago was uttering this remark, what were business men thinking about in connection with accounting? Here is a characteristic statement made by John S. Perry, the chairman of a meeting of stove manufacturers in 1872:

> "Allow me to say, gentlemen, that I believe the real foundation of our trouble lies in the need of a positive and definite knowledge as to the cost in detail of our goods, not only of the manufacture but of the selling and collecting."

I have attended many conventions of business men and have read the proceedings of many more, and statements such as I have just made are being made today. Does this indicate that the technique of accountancy has been standing still?

I think it is only fair quickly to assert that the technique of accountancy has not fallen behind in the march of progress. I need not give you the evidences; they are as well known to you as they are to me. But having thus dismissed that question another appropriately may be asked: Are business men utilizing the best technique in accounting to the fullest advantage? I assert that they are not and that here lies a great opportunity for the skilled cost accountant. I wish briefly to lay before you the opportunities in this field as I see them.

The technique of accounting for cost is a far different thing in the biological industry than it is in the ice cream industry. Cost accountng for a foundry presents different problems from cost accounting for the manufacture of vegetable ivory buttons. Each line of industry and each branch of business has its peculiar problems of accounting. These problems require the best thought and attention of skilled accountants.

May I give you a few illustrations? The ice cream business is one marked by great seasonal variations. Production in the winter months is usually very low, while production in July and August is at its peak. A difference of a few degreés in temperature during a certain month makes a marked difference in the consumption of ice cream. Here, from a cost accounting point of view, we have the problem incident to fluctuating volume. Fixed charges, such as depreciation, taxes and insurance run on regardless of volume, and yet the cost per gallon for such fixed charges is relatively high in the winter and relatively low in the summer months. In view of this situation, what after all is the best way to reflect the costs of operation of an ice cream company?

In the manufacture of serums used by physicians to combat dangerous diseases, live animals are used as the medium for the development of the various serums. The virus of a certain disease,

for example, is injected into a horse. He is then allowed to roam the pastures until the biological technique requires the removal of a certain amount of his blood, which, after the various essential processes have been performed, is concentrated and finds its way into the physician's hypodermic needle.

In the meantime, the horse has been restored to health and is again used for the same purpose. Ultimately, like all horses, he dies and a new horse must be bought and put into use. The accounting question of interest is—How shall the cost of the horse and his upkeep be apportioned to the various batches of serum that are obtained? This problem is complicated by the fact that the number of batches of serum obtained from an animal and the yield of individual batches vary greatly.

The accountants of the biological industry were confronted with this problem. No one of them had ever solved it to his entire satisfaction. It was only when they pooled their knowledge and the results of their experiments that they were able to develop an accounting procedure which would yield satisfactory results.

I referred to the button induustry. Buttons are of many kinds. Some of them are made of metal; others from claim shells, and still others from Pyroxylin compounds. A fourth variety is made from vegetable ivory, the branch of the industry to which I wish to refer.

Vegetable ivory is a nut which is imported from South America. Companies to the number of 15 or 20 convert these nuts into the polished buttons that are commonly used on men's coats and vests. The production processes in this industry cause interesting accounting problems. Some of the nuts are larger than others; some are perfect, while others have imperfections. Again, buttons are of different sizes and as a result the yield in buttons and the amount of waste from a given lot of nuts are variable factors. The waste, however, has a value as a by-product and this in turn introduces another interesting accounting problem. So much for the nut and button industries.

Now these accounting problems of the individual industries do not have to do with such things as bookkeeping forms and records. There is no problem involved in connection with the most useful form of voucher register for the cement industry, nor of time tickets or stores' requisition forms in the machine tool induustry.

These are matters which can be handled satisfactorily for the individual concern by any skilled accountant. The real accounting problems of the industry are those that have to do with the peculiar and complicated conditions of produuction that are found in the particular industry.

We have come to know this process of solving the common accounting problems of a given industry as the Uniform Cost Accounting Movement. Perry, the stove manufacturer to whom I alluded earlier, sensed the need for uniformity in cost accounting for his industry 57 years ago, but until recently accomplishments in the various industries have not been great. Moreover, they have not been as spectacular as has the development of the electrical industry to which I have referred, nor have the problems been taken seriously by business men. They have seemed to hold to the belief that cost accounting is a procedure that can be developed satisfafctorily by home-made methods; they have failed to recognize that it is a technique of business that requires the close study of skilled accountants.

You may be interested to know of the activities in a few of the industries that have been engaging successfully in this work. I refer first to the printing industry, for that industry has been engaged in the movement consecutively and on a substantial basis longer than most other industries.

In 1908 a Congress of Printers was held in St. Louis, devoted to the study of the cost accounting problems and out of that Congress grew the underlying principles of the uniform cost accounting procedure. The work, as I have said, has gone on with increasing momentum throughout the years, and I am informed that in nearly every large printing community the local branch of the United Typothetae of America, which is the trade association of the industry, has a thoroughly qualified accountant as a member of its staff. This accountant is assisting the printers of the community in installing and operating the uniform system of the industry.

Another important line of business that is engaged in this uniform cost accounting movement is the fresh milk industry. This line of business, consisting of thousands of different concerns, has developed uniformity of procedure in the past few years and is now engaged in securing the adoption of the uniform methods by

the membership. One interesting feature of their organization is the Controllers' Council. This Council is made up of the accountants of the industry. Mr. R. W. Case, Comptroller of the Bryant Chapman Company, and a member of your Chapter, has had an active part in the work of this organization.

The movement is not confined alone to the great widespread industries such as I have mentioned, but is being taken up on a substantial basis by the small groups of manufacturers who constitute homogenius industries. For example, there is the electric overhead crane industry, which is composed of 11 manufacturers. Their trade association is known as the Electric Overhead Crane Institute, and during the past three years their accountants have developed an excellent manual devoted to the peculiar problems of that industry.

I shall not weary you with further illustrations. I think you will agree with me, however, that those I have given show conclusively the growing interest of business men in this subject.

Accountants themselves have not taken this matter of uniform cost accounting as seriously as the matter deserves. Their difficulty usually has come not through an imperfect understanding of the technique of accounting itself, but rather because of imperfect artisanship, as I shall call it, in attuning the accounting procedure to the productive operations of the business.

During the past several years I have given the subject rather close attention. I have seen the accounting manuals of more than a hundred industries. Some of these are brief, superficial and unconvincing treatises; others have been extended, complicated rather than comprehensive, of as dubious practical value as the first class. A few, relatively, have been sound, workmanlike treatises, understandingly worded, comprehensive in development and generally of great utility to the executives of the industry and their accountants.

I wish now to speak to you on the accomplishment and the objectives of the electrical manufacturing industry in this field. More than 15 years ago, a committee of some of the most skillful accountants in the industry was formed, and in 1917 the first manual of procedure was published. Since that time, the committee has continued in existence, giving attention to special problems that have arisen and to the work of revision of this first

manual. It may be interesting to state that there are four of the original members who continue to serve. I should not pass this matter of personnel without reference to your own President, Mr. Zahronsky. He has served on this Accounting Committee of the Electrical Manufacturing Industry for several years, and from others, as well as from my own observations, I know he has been one of its most valuable members.

The Chairman of the Committee is Mr. S. L. Whitestone, Comptroller of the General Electric Company. Membership is not entirely confined to accountants, for there are two or three presidents of substantial companies whose interest is so keen as to make them of very great value through their work of convincing other executives of the importance of the movement.

What is this Manual of which I speak? It is first and foremost a comprehensive classification of accounts; a classification which may well serve as a model for any company in the electrical manufacturing industry. The Manual is also a source of information on basic features of general accounting and cost accounting procedure.

There may be some of you who may not fully appreciate the ramifications of the industry and the problems that are presented as a result of those ramifications.

The National Electrical Manufacturers' Association, with which I am connected as a member of staff, has in its membership approximately 325 manufacturing companies, ranging in size from the General Electric Company and the Westinghouse Company to very small companies. Products of the industry are great in variety and cover a wide range of physical characteristics. As evidence of this may I say that in our Association we maintain nearly 50 different groups of manufacturers, the similarity of whose products makes it desirable to furnish agencies for the discussion of their problems. There is, for example, the Motor and Generator Section, the Rigid Conduit Section, the Wire and Cable Section, the Carbon Brush Section, and so on.

Obviously, with such a wide range in size of companies and in the character of their products, the accounting manual of the industry cannot cover all needs of the industry. Therefore, its recommendations are basic and subject to amplification and development by the individual groups of manufacturers.

I turn now for a moment to the objective behind the uniform accounting movement in the industry. Doubtless you have already sensed it from my remarks with regard to the character of problems found in such industries as the fresh milk, pharmaceutical, button, and overhead crane industries. Uniformity of accounting means the acceptance by all manufacturers of the underlying principles that have been found to be the most satisfactory for the recording of the financial results and costs in their particular line. Hence, it is obvious that there is no need for standardization of forms or the details of accounting records, nor of the minutae of procedure that must be developed for each individual application.

Returning again to the work of the electrical manufacturing industry in this field, you may be interested in our plans for the immediate future. I refer, first, to the Accounting Manual. The present edition was issued in 1926, and, although brought up to date in various particulars since that time, it will now have a thorough re-examination with the objective of making it even more illuminating in its recommendations of a basic character with respect to cost accountng. For example, during the past year a sub-committee, on which, by the way, Mr. Zahronsky serves, made an exhaustive study of accounting for fixed assets and depreciation, and shortly that section of the Manual devoted to those subjects will be revised to embody the recommendations of that sub-committee. These recommendations do not necessitate the abandonment of previous practices except in minor details, but rather serve to amplify and bring up to date statements to the best practice in this important field.

It is my expectation that during the next few months new material will be developed on such important matters as the accounting treatment of overhead, both the overhead of manufacturing and that of distribution, and in the field of cost estimating for the establishment of selling prices. So much for the work ahead in the development of the Manual.

I have already indicated the need for supplementary procedure to fit the needs of individual branches of the induustry. For example, there is now a committee of accountants from the Molded Insulation branch of the industry which is working on the development of procedure applicable to that branch. I expect,

shortly, similar committees will be functioning in many other sections as, for example, the Carbon Brush Section and the Rubber Covered Wire Section. All of the work in these sections will rest on the bed rock of the uniform basic procedure set forth in the Manual of the industry. Thus, as we progress there will be real uniformity of accounting practice, taking into account, in an intelligent way, the peculiarities of the several branches. Let me assure you that the electrical manufacturing industry is in earnest in its desire to bring about this uniformity, and I am proud and happy to be identified with the industry in its movement.

UNIFORM COST ACCOUNTING IN THE RETAIL LUMBER BUSINESS

THIS paper is intended to present the advantages of uniform cost accounting to a trade association, rather than to describe the simplicities or intricacies of any specific cost system. The cost features involved, it will be observed upon study of the paper, are very simple, although quite effective in their guidance of the management.

The retail lumber industry for many years has represented one of the most competitive lines of business in our American scheme. This situation is due to several causes, chief of which is the fact that the retail lumber dealer is selling to contractors, who themselves are competing among one another for the opportunity to erect a certain building or home. The dealer seldom has direct contact with the owner so that in too many cases the lowest bidder gets the job and the situation therefore arises in which the contractor demands from the lumber dealer the lowest price possible. The contractor pleads with the lumber dealer for low prices in order that he, the contractor, may be the successful bidder, thus permitting him to buy his material from the dealer. And the retail dealer, knowing that this contractor will come to him for further orders, is prone to cut his sales price to the minimum, which in many cases is actually below cost.

With these conditions prevalent in almost every locality in the

country and with an over supply of retail lumber yards in a great many cities, it can readily be seen that the necessity for cost information is of a great importance. Fortunately, the number of retail lumber dealers who know their costs and who make a price and stick to it are becoming more numerous. This result has been obtained chiefly through the use of the National Uniform Cost Accounting System as developed by their trade association, The National Retail Lumber Dealers' Association. Their accounting program furnishes a striking example of the good that can be done by the trade association in educating its members by showing the losses that arise through a blind struggle for volume.

The greatest good that has come to the members of the Association using the system has been in the comparisons afforded, and to further this end cost study clubs have been organized in some of the communities using the system. Bear in mind that the system is installed and operates in such a way that the items of cost include the same elements of expense in every installation. This permits the dealer to determise in what phase of his business he is not operating efficiently, and likewise to determine whether or not he is getting enough for his material in comparison with his competitors. Some cases are on record in which only by this means has an operator been able to know his weaknesses and through the knowledge gained from the comparisons investigation has been made to determine the source of the leak in the business. This has been the value of every trade association based on cost accounting. One operator may go on for years, comparing his own costs—this year with last, this month with last month—but always the same inefficiency is present and costs him money. A comparison with others in the same line, including the same expenses, shows the weaknesses in their true light.

Let us follow through a consensus report to better understand the value of these comparisons. Imagine that you, the reader, are the manager of the company whose figures are indicated by the check mark. You are a wide-awake, aggressive, intelligent man who has always had good accounting and you have followed it carefully. What can you learn that is new to you? Look first at the figures for No. 5 below—part of an actual report presented to a group of eighteen in one city:

WOODVILLE CONSENSUS REPORT

FOR ..... MONTHS PERIOD ENDED .....

LUMBER DEPARTMENT

No.	*	Av. Cost Per M	Av. Sell. Price Per M	Gross Margin	Total Cost	Handling Cost	Delivery Cost	Sell & Admin. Cost Amount	Per Cent	Net Profit to Sales
1	A	$35.35	$47.17	$11.82	$15.93	$3.29	$2.53	$10.11	28%	—8.1%
2	A	38.67	50.97	12.30	13.39	3.67	2.97	6.75	17%	—2.6%
3	A	36.79	49.90	13.11	10.88	2.55	1.81	6.52	17%	4.0%
4	A	36.71	50.66	13.95	13.64	3.04	2.74	7.86	21%	.6%
5V	A	37.44	52.65	15.21	11.71	1.95	3.22	6.54	15%	6.8%
Average		36.99	50.27	13.28	13.10	2.90	2.65	7.55	19%	1.4%
6	B	36.21	48.51	12.30	11.20	2.82	2.58	5.80	16%	2.0%
7	B	34.62	50.47	15.85	11.92	2.94	2.77	6.21	18%	8.1%
8	B	34.60	46.44	11.84	10.83	1.72	1.48	7.63	22%	1.2%
9	B	35.33	46.73	11.40	9.37	2.24	.98	6.15	17%	4.4%
Average		35.19	48.04	12.85	10.83	2.43	1.95	6.45	18%	4.0%

(Groups C & D—No. 10 to 18 not included)

*Index to Volume—
A—Up to 1,600 M feet sold
B—1,600 to 1,900 M feet sold

First, you know you are getting fair prices, at least better than the average of your group, and you are third from highest in the entire group of 18. Your total cost is comparatively low at $11.71. Handling is good, but delivery is high. Administrative and selling is well in line and the net profit of 6.8% to sales is very good for the group, although four in the entire group of eighteen have better records in this regard.

So far you know that your good showing is due largely to good prices, with some credit being due to low costs of operation. You knew your gross margin or "spread" would be good because you do not seek after the competitive business and have always maintained your price—you are not a "price cutter". But this delivery cost—why so high? It is higher than any in the entire group.

A second report will show the details entering into the delivery cost, the gas and oil cost in percentage to sales, labor, etc. In this particular case, the dealer in question found his truck labor was in line, but his upkeep cost high. He also found he was

operating more trucks in comparison with his volume than his competitors—he delivered only $38,300.00 in sales per truck, lower than any of the others. One company delivered twice as much.

Other comparisons are available—the analysis of the handling cost of $1.95 per M. and of the administrative cost of $6.54. The first shows just how much of the $1.95 is depreciation, insurance, taxes, rent, yard labor, maintenance, etc. Administrative is divided into about twenty items. It makes a very great difference to you, in your attitude toward your expenses, to speak in terms of dollars and cents and not in percentages, to look at a load of lumber being carted from your yard and say, "In every thousand feet of that I have 77 cents of advertising, 45 cents of lost accounts, 60 cents of interest on borrowed money, 54 cents of discount, $3.17 of salary for me and my partner, etc." You see what a difference just a few cents make! And knowing these things you have the backbone to demand a fair price and stick to it. It is the old story of the moral power of cost accounting that nothing else can quite replace.

And these comparisons of individual costs of administrative items, again, permit you to compare with your competitors, find your weakness, investigate and apply the remedy.

Many other comparisons are possible in a trade association as a result of uniform accounting. Let us look at one more report, remembering first that profit can be increased in three ways, or combinations of three ways—volume, mark-up and expense. Volume increase at the same mark-up means greater profit, although volume increase at a reduced mark-up may spell losses. The same volume at the same mark-up with reduced expenses means increased profit, etc. Now look at the schedule, which shows the data for nine of the companies:

CONSENSUS REPORT

FOR ..... MONTHS ENDED ..... AND .....

COMPARATIVE DATA—ALL DEPARTMENTS

SHOWING INCREASE IN SALES, GROSS MARGINS, EXPENSES AND PROFITS

(ALL FIGURES IN EVEN HUNDRED DOLLARS)

No.	Sales	Gross Margin	Mark-Up on Cost 1927	Mark-Up on Cost 1928	Expense	Expense to Sales 1927	Expense to Sales 1928	Net Profit	Net to Sales 1927	Net to Sales 1928
			%	%		%	%		%	%
2	$40,281	$10,324	25.7	27.6	$2,715	16.6	14.3	$7,609	3.8	7.3
3	—31,544	—5,726	26.4	28.0	—4,753	21.1	23.2	—973	—2.4	—1.4
4	45,819	13,442	39.2	39.6	9,632	30.0	28.0	3,810	—1.8	.1
7	—14,041	2,199	46.7	49.5	—10,129	25.5	24.2	12,328	6.3	8.9
8	15,315	1,525	64.9	59.1	3,639	29.0	28.0	—2,114	10.3	8.5
10	—17,786	—8,095	58.0	56.0	—5,307	35.2	36.0	—2,788	1.8	.03
11	—58,008	—15,644	59.0	67.7	—4,023	29.0	35.0	—11,621	9.0	5.2
15	—34,391	—3,918	36.0	41.6	—15,520	31.6	29.0	11,602	—5.0	.5
16	—44,923	—11,229	44.2	47.0	—13,508	29.6	29.6	2,279	.9	2.3

Look at No. 7. He has cut his volume $14,041, but his mark-up has so increased as to give him actually $2,199 more gross margin. And this cut in sales has permitted him to reduce his payroll and other expenses $10,129. He is actually $12,328 ahead of last year at the same time, though doing less business. No. 16 has had about the same experience. So has No. 15. No. 11 has a decided cut in volume, but hasn't yet adjusted his expenses to the reduced scale and is behind last year in profit. No. 8 has greater volume, but he has cut his price to do it—it has cost him too much. You see how such comparisons drive home the fallacy of volume. Volume, without sufficient mark-up, is a boomerang.

These comparisons are available and the control through cost data is secured through the use of the uniform system designed for the industry. Under the "National System," as it is called, the purchases and sales are divided into at least two and possibly more classes. In one class is placed the lumber items, which are sold on a thousand foot or board measure basis and which comprises from 65% to 80% of the business. In the second class, the "Building Material Department", is included the specialties, roofing, shingles, lath, sheetrock, etc. Other departments, as mill,

coal, builders' supplies, hardware, etc., may be added to suit a local situation. In operating the system it is essential that the purchases and sales be handled under the proper department. For this purpose schedules are prepared showing the various kinds of material included under each heading. All items bought and sold under the Lumber Department carry the thousand foot measure, so that we have the inventory as of the first of the year with so many thousand feet of lumber, represented by so many dollars, and with the purchases and sales on the same basis. For illustration:

	Feet	Amount	Average
Inventory	120,000	$48,000.00	$40.00
Purchases	240,000	91,200.00	38.00
Sales	220,000	118,800.00	54.00

This matter of keeping a record of the feetage on lumber is the first essential in the use of the system.

The second essential is the setting up of the fixed charges for the year. The installing accountants, working under the National Association, have very definite and uniform methods of properly allocating the depreciation, insurance, taxes and rent to the various operating departments. It is not necessary to go into details except to say that a monthly entry is provided for use in a fixed journal, by which means provision is made for the inclusion of these expenses in the monthly operating statements.

With the accounts properly arranged, it is possible to prepare from the monthly trial balance operating statements by departments. It is not necessary to cost each sale, but if the feetage is cumulated on all sales included under the Lumber Department list (and the selling price is usually placed on the M foot basis so that the board feetage is indicated on the invoice) and if this total feetage sold for the period is multiplied by the average cost, it is possible to determine the approximate cost of sales for the period. Let us take the example above:

	Feet	Amount	Average
Inventory	120,000	$48,000.00	$40.00
Purchases	240,000	91,200.00	38.00
Total	360,000	$139,200.00	$38.67

The $38.67 is obtained by dividing $139,200.00 by 360,000.

Inasmuch as every thousand feet of lumber sold has had to be taken from the opening inventory or the purchases, it may be easily understood that the average cost of this lumber will be $38.67 as indicated above. Should we multiply the 220 M feet sold by $38.67 we would have something as follows:

	Feet	Amount	Average
Sales	220 M	$11,880.00	$54.00
Cost of Sales—Estimated....	220 M	8,507.40	38.67
Gross Margin		$3,372.60	$15.33

The $15.33 average gross margin per thousand is a very important figure as will be seen later. The cost of sales, when estimated over a period of one or two months, may not be accurate. But after the sales have been of sufficient volume to present a cross-section of all classes of material, reliance can be placed upon the results, for the average cost, representing the same variance in materials, will be properly reflected.

It might be noted in passing that under the system provision is also made to indicate the approximate inventory on hand at the end of each month. In the above we know that the inventory and purchases total 360,000 feet. If now 220,000 feet have been sold, 140,000 feet remain in stock. In other words, the lumber dealer by watching this comparison may determine whether or not his stock of material is increasing or decreasing, for insurance information, etc.

The next step is to determine the cost of handling, delivery and administrative and selling expense, also on the thousand foot basis, and compare with the standard. The handling cost includes the fixed expense for depreciation, insurance, taxes and rent of the sheds and ground in which the lumber is stored, the labor for handling-in the lumber, a portion of the stable or truck expense, demurrage, maintenance and repairs of yard items, etc. The total expense for the period divided by the thousand feet of lumber purchased, in this case 240 M, would give the average cost of handling per thousand. In a similar way the expense of operating the trucks for delivery, the truck drivers' wages and other such items are cumulated in a separate account and when divided by

the thousand feet of lumber sold or delivered, will give the delivery cost per thousand. And the administrative expense, likewise divided by the number of thousand feet sold during the period, will give the selling and administrative expense per thousand. The management, knowing their standards and what they should accomplish, make their comparisons with the actual, monthly.

Let us assume that in this case the average handling cost would be $3.00 per thousand, delivery cost $2.50 per thousand and selling and administrative, $9.00 per thousand. The total operating cost for the period is therefore $14.50. If we should deduct this amount from the gross margin or spread of $15.33 the net result would be $.83 net profit per thousand feet.

In the Building Material Department, we have no such unit as board measure used in the lumber department and as a result must use a percentage. Some testing must be done and some analysis made to determine what this percentage should be. In any event it must be adjusted at the end of the first year's operation under the system. Fortunately the material included in the department is of such quantity that it is possible to take a physical inventory frequently, thus checking up on the gross profit percentage. The fixed expenses are allocated to this department and the procedure is exactly the same in determining the operating cost, except that percentages are obtained instead of a unit cost per thousand feet.

It may be of interest to note in this connection that these percentages for handling, delivery, and selling and administrative are based on the cost of sales and not on the sales. The experience of the installing accountants showed that most of the dealers figured their expenses as a percentage of the sales, but immediately turned round and applied this percentage to the cost of merchandise, thinking that by this method they covered all their operating costs. But in most cases with an expense of 25% of the sales, it was necessary to apply 33 1/3% to the cost to cover the expense and their method therefore was incorrect. For this reason, under the system the operating percentages are based on the cost of sales and may be applied directly to the cost of any item of merchandise to determine the total cost of that piece delivered to the job.

The reader will understand by this time that this system is one

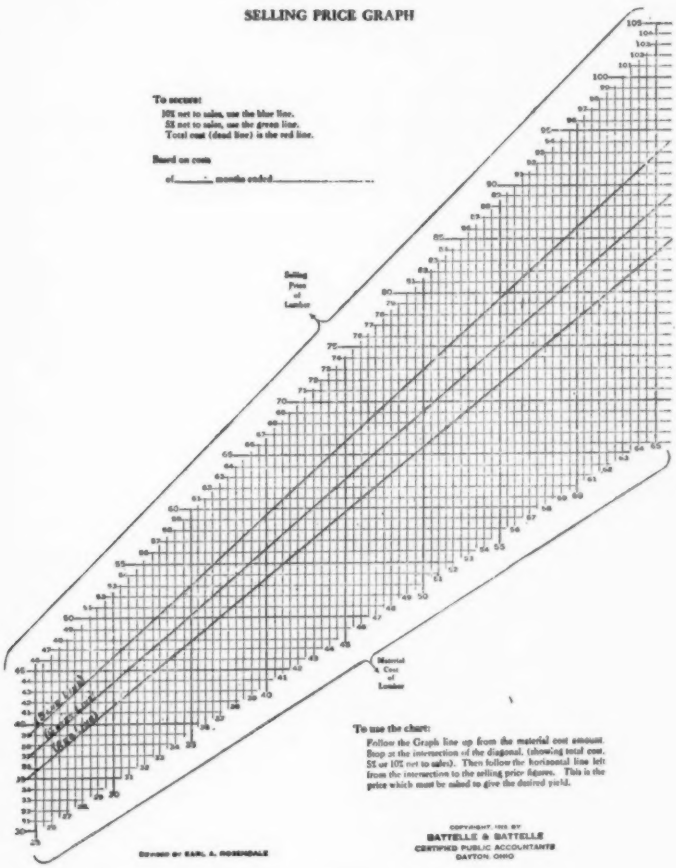
which involves but little bookkeeping detail and requires no extra work except the cumulation of the sales feetage, the monthly fixed entries and the preparation of the monthly reports. The expense accounts are set up along the usual lines with analysis carried if preferred in subsidiary records. An unusual feature of the system lies in the fact that interest paid and discount allowed are included with the administrative and selling expense so that when the total administrative cost is secured and applied to determine the total cost price of material delivered to the job, these items will be included in this total cost price, without the necessity for an extra calculation.

In applying the operating costs to various prices of lumber, handling and delivery as physical costs are added to the invoice price and the administrative is then added as a percentage of this invoice cost—(the percentage is the administrative and selling expense divided by the cost of sales). This results is a higher cost for administrative expense on the higher priced material. This method results as follows; for various grades of material:

Invoice Cost	$30.00	$40.00	$50.00	$60.00	$70.00
Handling Cost	3.00	3.00	3.00	3.00	3.00
Delivery Cost	2.50	2.50	2.50	2.50	2.50
Selling and Administrative 20%	6.00	8.00	10.00	12.00	14.00
Total Cost	$41.50	$53.50	$65.50	$77.50	$89.50

From the above, a graph has been developed and copyrighted by one of the installing accountants to indicate the total cost of any priced material for any individual concern knowing its costs of operation. The chart also shows the necessary selling price to secure 5% net to sales and to secure 10% net to sales. This graph is simply a method of quick reference which may be used to check selling price lists and assure the dealer that he is securing an element of profit on the material sold. For instance, lumber costing $32.00 for material costs $44.00 when delivered to the job. It must be sold for $46.25 to secure 5% net to sales and $49.00 to yield 10% to sales. (The figures will be found to be correct within 25 cents by using the graph.) The graph is intended to prevent the dealer going below the danger or "deal line".

Uniform cost accounting, with the possibility of permitting the individual to know his costs, establish his standards, and stick to his selling price in a highly competitive line, is of inestimable value. But when, coupled with that are the values to be derived from a trade association with his competitors, the benefits are unlimited. Too many trade associations have no bases on which to function. They cannot endure long on banquets and social conversations.


SELLING PRICE GRAPH
To secure:
10% net to sales, use the blue line.
5% net to sales, use the green line.
Total cost (dead line) is the red line.
Based on costs
of_____ months ended_____
Selling Price of Lumber
Material Cost of Lumber
To use the chart:
Follow the Graph line up from the material cost amount. Stop at the intersection of the diagonal, (showing total cost, 5% or 10% net to sales). Then follow the horizontal line left from the intersection to the selling price figures. This is the price which must be asked to give the desired yield.
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They must have some facts for their members to consider and discuss. Cut-throat competition cannot survive among men who learn to know each other and in that respect uniform cost accounting may serve only as a vehicle through which confidence may be established, something to bring them together about a table. Usually, however, the advantages are more far reaching, and serve to hold the interest of the group and stablize the individual dealer. It is not a panacea, but surely a great step toward better business and better business relationships.

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